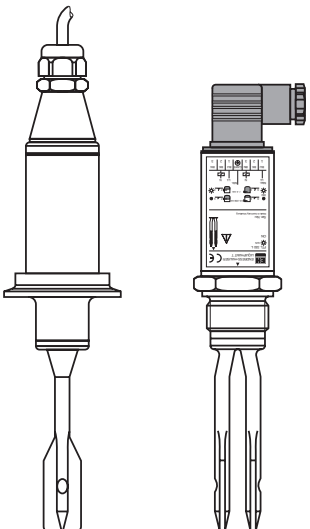
KA 047F/00/a6/11.02
016758-0000

liquiphant
FTL 330 L



d **Füllstandgrenzschalter**
e **Level Limit Switch**
f **Détecteur de niveau**
es **Detector de nivel**
i **Interruttore di livello**
nl **Niveauschakelaar**

Endress + Hauser
The Power of Know How

d Inhalt

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Achtung!
= verboten; führt zu fehlerhaftem Betrieb oder Zerstörung.

Caution!
= forbidden – leads to incorrect operation or destruction.

Attention !
= interdit - peut provoquer des dysfonctionnements ou la destruction.

es **Indice**

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nl **Inhoud**

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¡Atención!
= Prohibido, peligro de mal funcionamiento o de destrucción.

Attenzione!
= Vietato, pericolo di malfunzionamento o di distruzione.

Opgelet!
= verboden; leidt tot outieve werking of storing.

d Sicherheitshinweise

Der Liquiphant FTL 330 L darf nur als Füllstandgrenzschalter für Flüssigkeiten in nicht explosionsgefährdeten Bereichen verwendet werden. Bei unsachgemäßem Einsatz können Gefahren von ihm ausgehen.

Das Gerät darf **nur von qualifiziertem und autorisiertem Fachpersonal** unter strenger Beachtung dieser Betriebsanleitung, der einschlägigen Normen, der gesetzlichen Vorschriften und der Zertifikate (je nach Anwendung) eingebaut, angeschlossen, in Betrieb genommen und gewartet werden.

In der Gebäudeinstallation ist ein Netzschalter für das Gerät leicht erreichbar in dessen Nähe zu installieren. Er ist als Trennvorrichtung für das Gerät zu kennzeichnen.

e Notes on Safety

The Liquiphant FTL 330 L is a level limit switch designed for use in non-hazardous areas. If used incorrectly it is possible that application-related dangers may arise. The level limit switch Liquiphant FTL 330 L may be installed, connected, commissioned, operated and maintained **by qualified and authorised personnel only**, under strict observance of these operating instructions, any relevant standards, legal requirements, and, where appropriate, the certificate. Install an easily accessible power switch in the proximity of the device.

Mark the power switch as a disconnector for the device.

f Conseils de sécurité

Le Liquiphant FTL 330 L doit être exclusivement utilisé comme détecteur de niveau pour liquides en zones non explosibles. Il peut être source de danger en cas d'utilisation non conforme aux prescriptions.

L'appareil ne doit être installé, raccordé, mis en service et maintenu **que par un personnel qualifié et autorisé**, qui tiendra compte des indications contenues dans la présente mise en service, des normes en vigueur et des certificats disponibles (selon l'application).

Installer un commutateur réseau à proximité immédiate de l'appareil, en veillant à ce qu'il soit facilement accessible. Marquer ce commutateur comme prise de coupure de l'appareil.

es **Notas sobre seguridad**

El Liquiphant FTL 330 L debe emplearse única y exclusivamente como detector de nivel con fluidos en zonas sin peligro de explosión. Su empleo inapropiado puede resultar peligroso. El equipo deberá ser montado, conectado, instalado y mantenido **única y exclusivamente por personal cualificado y autorizado**, bajo rigurosa observación de las presentes instrucciones de servicio, de las normativas y legislaciones vigentes, así como de los certificados (dependiendo de la aplicación).
Instalar un interruptor de fácil acceso en las proximidades del equipo.
Identificar el interruptor como desconectador del equipo.

i **Note sulla sicurezza**

Il Liquiphant FTL 330 L può essere utilizzato come sicurezza di troppo pieno, solo in aree sicure.
Un'installazione non corretta può determinare pericolo.
Lo strumento può essere montato **solamente da personale qualificato ed autorizzato**. La messa in esercizio e la manutenzione devono rispettare le indicazioni di collegamento, le norme e i certificati di seguito riportati.
Installare un interuttore per l'alimentazione in prossimità del dispositivo.
Marcare l'interuttore come disconnessione del dispositivo.

nl **Veiligheidsinstructies**

Gebruik de Liquiphant FTL 330 L alléén als niveauschakelaar voor vloeistoffen in niet explosiegevaarlijke gebieden.
Het instrument **alleen door gekwalificeerd en geautoriseerd personeel** laten inbouwen, aansluiten, in bedrijf nemen en onderhouden. Neem de instructies in deze Inbedrijfstellingsvoorschriften, de desbetreffende normen, de wettelijke voorschriften en eventuele certificaten in acht.
Installeer een makkelijk bereikbare voedingschakelaar in de nabijheid van het instrument.
Kenmerk de voedingschakelaar specifiek voor het instrument.

d **Geräte-Identifikation**

e **Device Identification**

f **Dénomination**

es **Identificación del equipo**

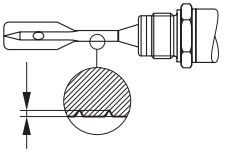
i **Identificazione dello strumento**

nl **Instrument-identificatie**

B < 1,5 µm

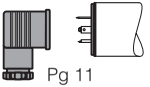
S < 0,5 µm

Y *2



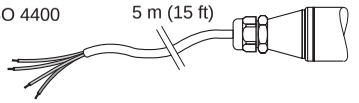
1 19 ... 253 V AC
2 10 ... 55 V DC, PNP
9 *2

S IP66/68



C IP65/67, ISO 4400

Y *2



*1 ohne / without / sans / sin / senza / zonder

*2 andere / others / autres / otros / altri / andere

d **Behandlung**
Am Gehäuse anfassen,
nicht an der Schwinggabel

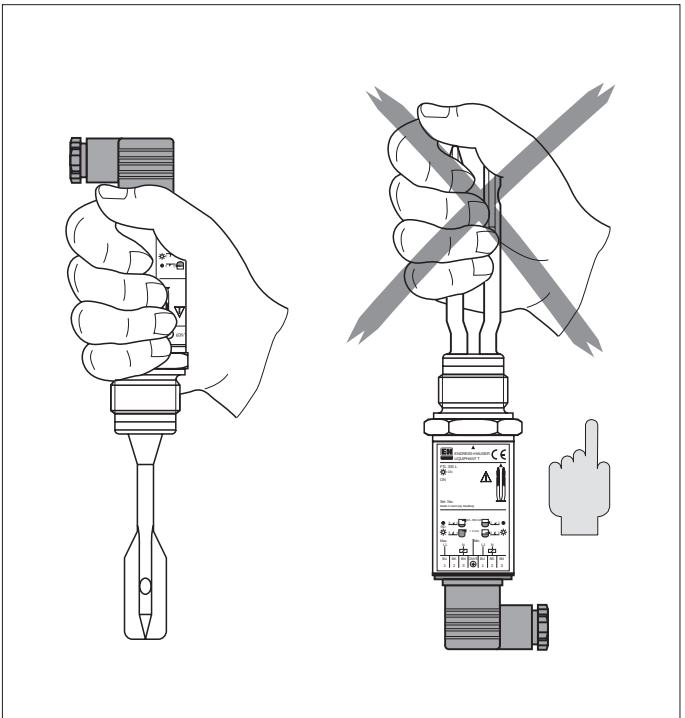
e **Handling**
Hold by the housing,
not by the sensor forks

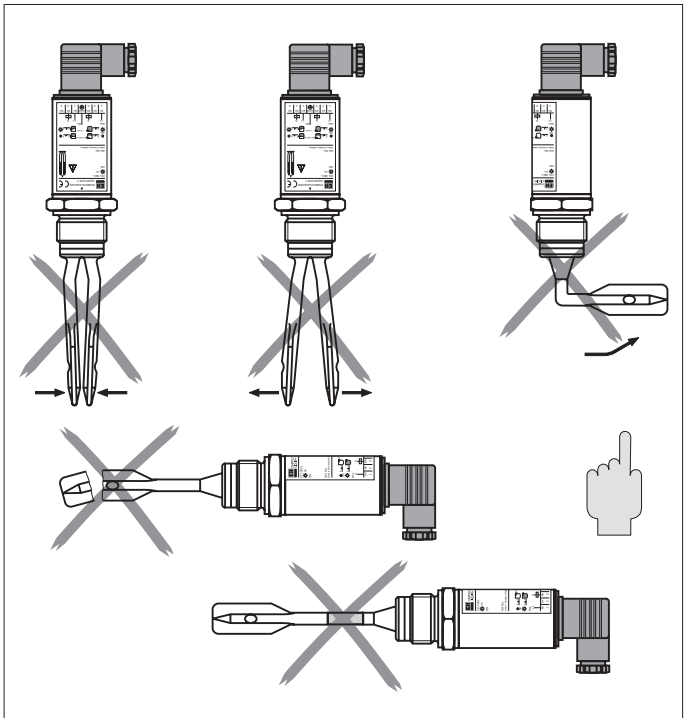
f **Manipulation**
Tenir par le boîtier,
et **non** par la fourche

es **Modo de empleo**
Coger por el cabezal,
no por las horquillas.

i **Accorgimenti**
Afferrare la custodia,
non i rebbi

nl **Behandeling**
De behuizing vastpakken,
niet de trilvork





d **Nicht** verbiegen
Nicht kürzen
Nicht verlängern

e Do **not** bend
Do **not** shorten
Do **not** lengthen

f **Ne pas** déformer
Ne pas raccourcir
Ne pas rallonger

es **No** torcer
No acortar
No alargar

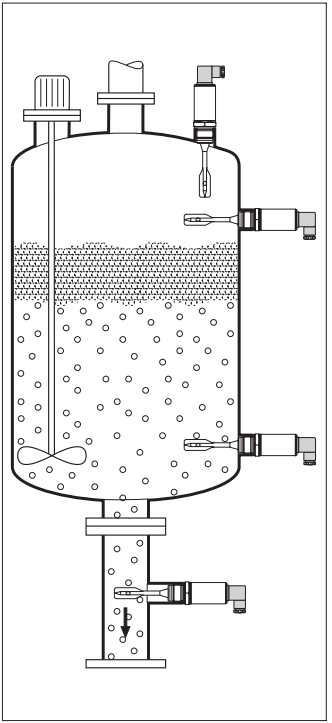
i **Non** stringere o allargare
Non accorciare o allungare
Non piegare

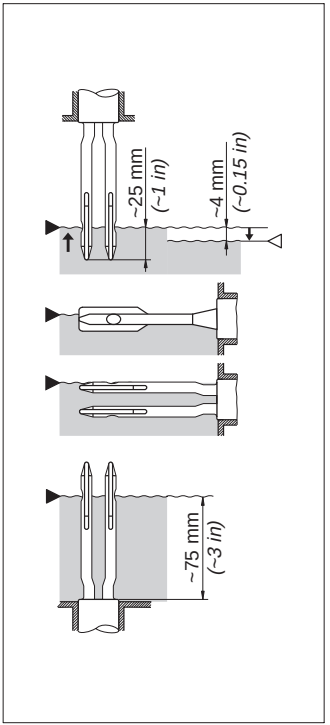
nl **Niet** verbuigen
Niet inkorten
Niet verlengen

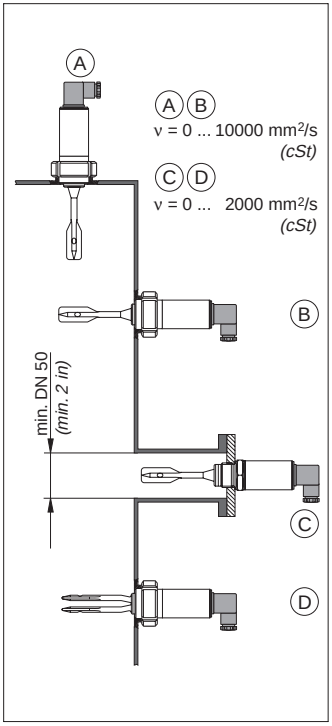
d Einbaubeispiele
e Mounting examples
f Exemples d'implantation
es Ejemplos de montaje
i Esempi di montaggio
nl Inbouwvoorbeelden

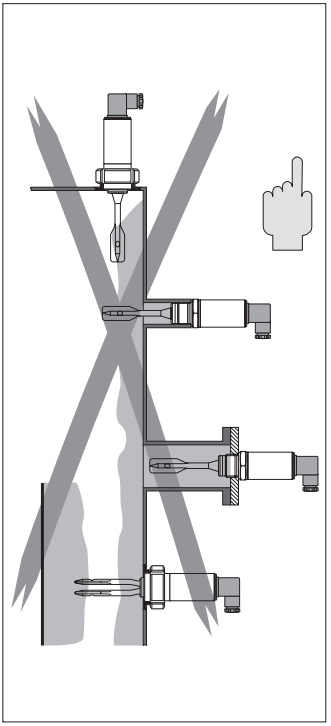
▶
- **d** Schaltpunkt
- **e** Switchpoint
- **f** Point de commutation
- **es** Punto de conmutación
- **i** Punto di commutazione
- **nl** Schakelpunt

◁
- **d** Schalthysterese
- **e** Switching hysteresis
- **f** Hystérésis
- **es** Histerésis de conmutación
- **i** Isteresi
- **nl** Schakelhysterese









d Viskosität und Ansatzbildung berücksichtigen

e Take account of viscosity and build-up

f Tenir compte de la viscosité et du colmatage

es Tener en cuenta la viscosidad y la formación de adherencias

i Attenzione alla viscosità e ai depositi

nl Houdt rekening met de viscositeit en de vorming van aangroei

d **Einbau**
Prozeßanschluß G
G 1 A, DIN ISO 228/I

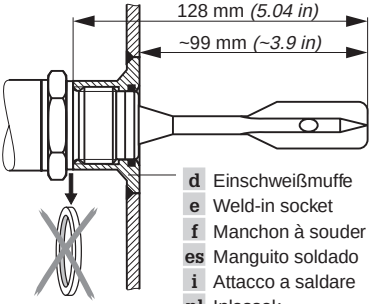
e **Mounting**
Process connection G
G 1 A, DIN ISO 228/I

f **Montage**
Raccord process G
G 1 A, DIN ISO 228/I

es **Montaje**
Conexión a proceso G
G 1 A, DIN ISO 228/I

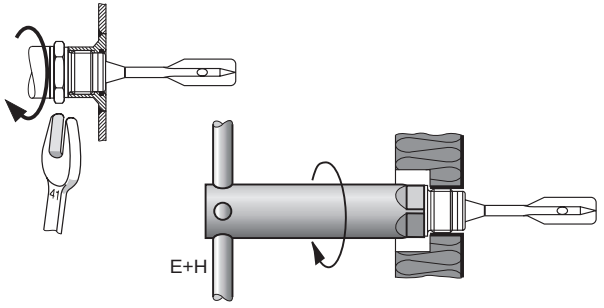
i **Montaggio**
Attacco al processo G
G 1 A, DIN ISO 228/I

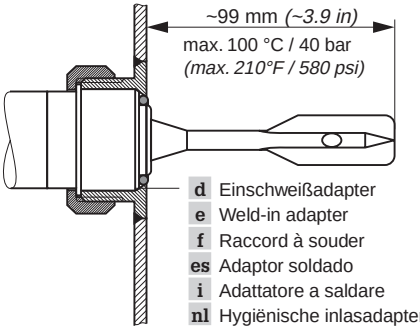
nl **Inbouw**
Procesaansluiting G
G 1 A, DIN ISO 228/I



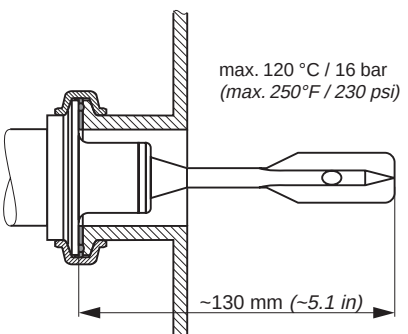
max. 150 °C / 25 bar
(max. 300°F / 360 psi)

max. 100 °C / 40 bar
(max. 210°F / 580 psi)





frontbündig
flush mounting
montage affleurant
montaje enrasado
montaggio a filo flangia
direct aan proceszijde

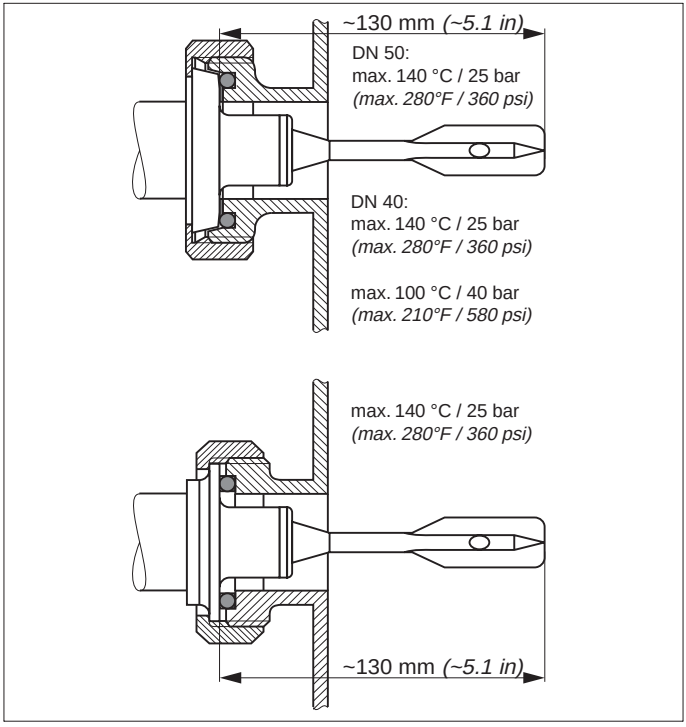


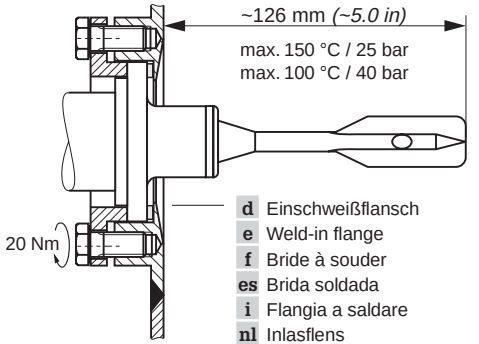
d Prozeßanschluß F
Endress + Hauser
e Process connection F
Endress + Hauser
f Raccord process F
Endress + Hauser
es Conexión a proceso F
Endress + Hauser
i Attacco al processo F
Endress + Hauser
nl Procesaansluiting F
Endress + Hauser

d Prozeßanschluß U, T
Triclamp 1½", 2", ISO 2852
e Process connection U, T
Triclamp 1½", 2", ISO 2852
f Raccord process U, T
Triclamp 1½", 2", ISO 2852
es Conexión a proceso U, T
Triclamp 1½", 2", ISO 2852
i Attacco al processo U, T
Triclamp 1½", 2", ISO 2852
nl Procesaansluiting U, T
Triclamp 1½", 2", ISO 2852

d Prozeßanschluß P, M
DN 40, DN 50, DIN 11851
e Process connection P, M
DN 40, DN 50, DIN 11851
f Raccord process P, M
DN 40, DN 50, DIN 11851
es Conexión a proceso P, M
DN 40, DN 50, DIN 11851
i Attacco al processo P, M
DN 40, DN 50, DIN 11851
nl Procesaansluiting P, M
DN 40, DN 50, DIN 11851

d Prozeßanschluß S
SMS, DN 51 (2")
e Process connection S
SMS, DN 51 (2")
f Raccord process S
SMS, DN 51 (2")
es Conexión a proceso S
SMS, DN 51 (2")
i Attacco al processo S
SMS, DN 51 (2")
nl Procesaansluiting S
SMS, DN 51 (2")


~130 mm (~5.1 in)
DN 50:
max. 140 °C / 25 bar
(max. 280°F / 360 psi)
DN 40:
max. 140 °C / 25 bar
(max. 280°F / 360 psi)
max. 100 °C / 40 bar
(max. 210°F / 580 psi)
max. 140 °C / 25 bar
(max. 280°F / 360 psi)
~130 mm (~5.1 in)


~126 mm (~5.0 in)
max. 150 °C / 25 bar
max. 100 °C / 40 bar
(max. 300 °F / 360 psi)
(max. 210 °F / 580 psi)
20 Nm
d Einschweißflansch
e Weld-in flange
f Bride à souder
es Brida soldada
i Flangia a saldare
nl Inlasflens

E+H 916743-0000

d Prozeßanschluß D DRD, DN 65

e Process connection D DRD, DN 65

f Raccord process D DRD, DN 65

es Conexión a proceso D DRD, DN 65

i Attacco al processo D DRD, DN 65

nl Procesaansluiting D DRD, DN 65

d Schwinggabel ausrichten
Markierung ▼ beachten

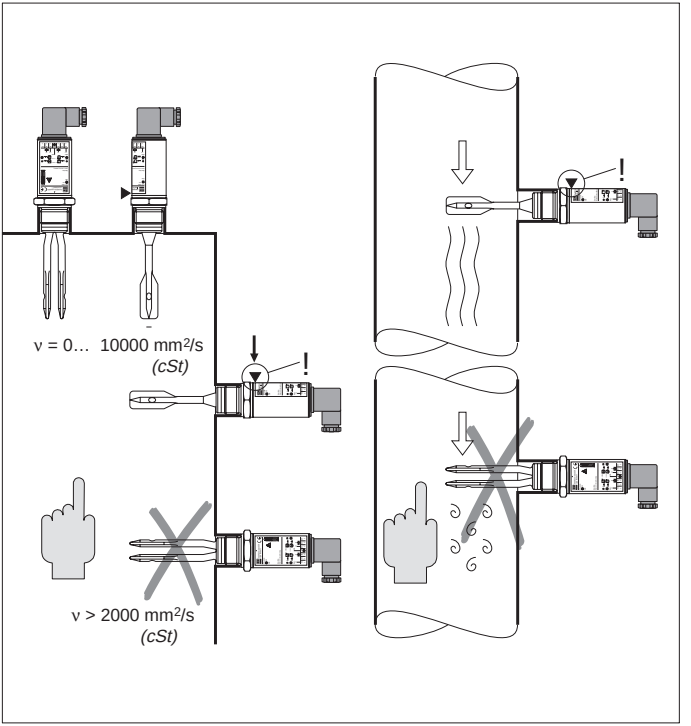
e Align sensor forks
Note mark ▼

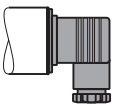
f Orienter la fourche
Tenir compte du repère ▼

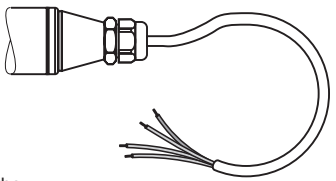
es Orientación de las horquillas
Atención a la marca ▼

i Orientare la forcella.
Osservare il contrassegno ▼

nl Trilvork uitrichten
Let op de markering ▼







d	Nummer	=	Farbe
e	Number	=	Colour
f	Numéro	=	Couleur
es	Número	=	Color
i	Numero	=	Colore
nl	Nummer	=	Kleur

1	=	BU	blau, blue, bleu, azul, blu, blauw
2	=	BK	schwarz, black, noir, negro, nero, zwart
3	=	BN	braun, brown, brun, marron, marrone, bruin
⏚ (PE)	=	GNYE	grün/gelb, green/yellow, vert/jaune, verde/amarillo, verde/giallo, groen/geel

d Anschluß
Stecker oder Kabel

e Connection
Plug or cable

f Raccordement
Connecteur ou câble

es Conexiones
Conector o cable

i Collegamenti
Connettore o cavo

nl Aansluiting
Connector of kabel

d Spannung beachten
Leitung in Kabeldose einführen

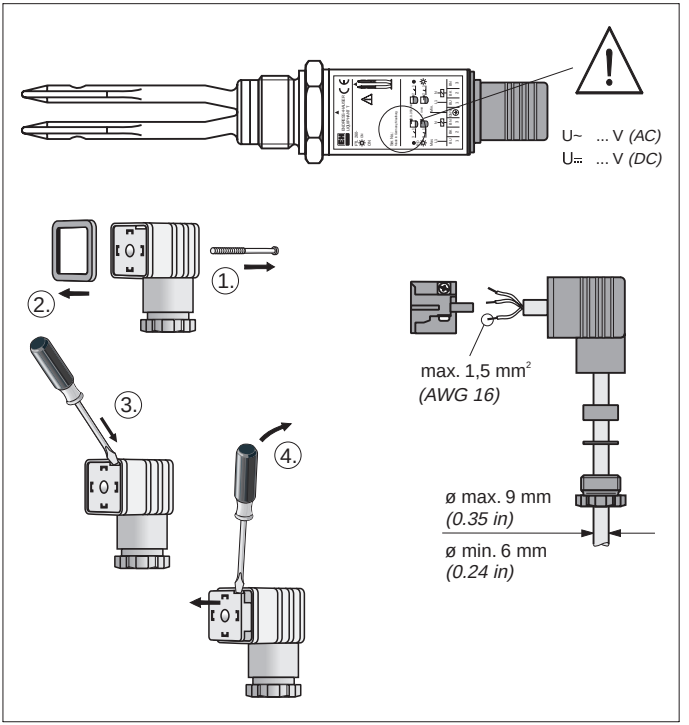
e Note voltage rating
Insert cable into plug housing

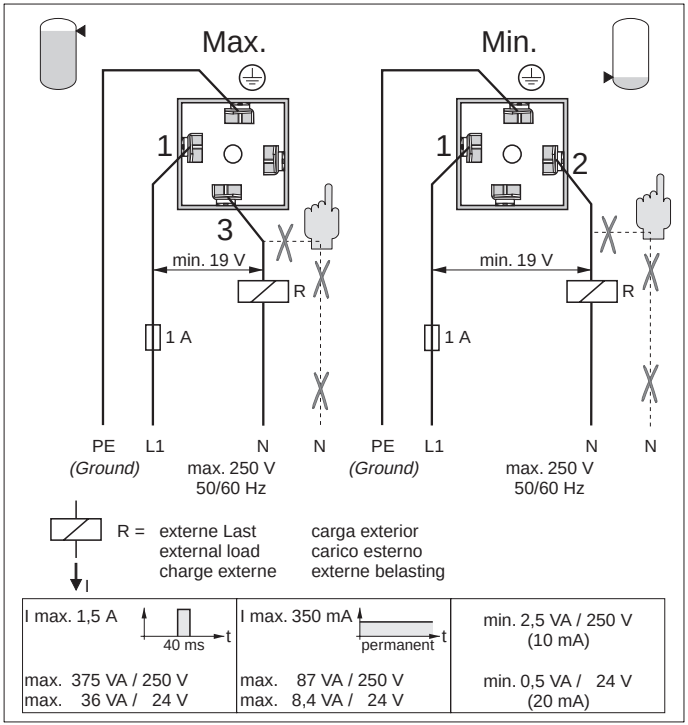
f Noter la tension
Insérer le câble dans le bôitier

es Atención al voltaje
Intensar el cable en el conector

i Attenzione alla tensione
Inserire il cavo nel connettore della custodia

nl Controleer de voedingsspanning
Leidt de kabel in de connector





d **Wechselstromvariante anschließen**
Max. = Maximum-
Min. = Minimum-Sicherheitsschaltung

e **Connection AC version**
Max. = max. fail-safe mode
Min. = min. fail-safe mode

f **Raccordement variante tension alternative**
Max. = sécurité maximum
Min. = sécurité minimum

es **Conectar las variantes de corriente alterna**
Máx. = Conexión de seguridad máxima
Mín. = Conexión de seguridad mínima

i **Collegamento della versione in corrente alternata**
Max. = Sicurezza di massimo
Min. = Sicurezza di minimo

nl **Wisselstroomvarianten aansluiten**
Max. = max. veiligheidsschakeling
Min. = min. veiligheidsschakeling (ruststroomprincipe)

d **Gleichstromvariante anschließen**
Max. = Maximum-
Min. = Minimum-
Sicherheitsschaltung

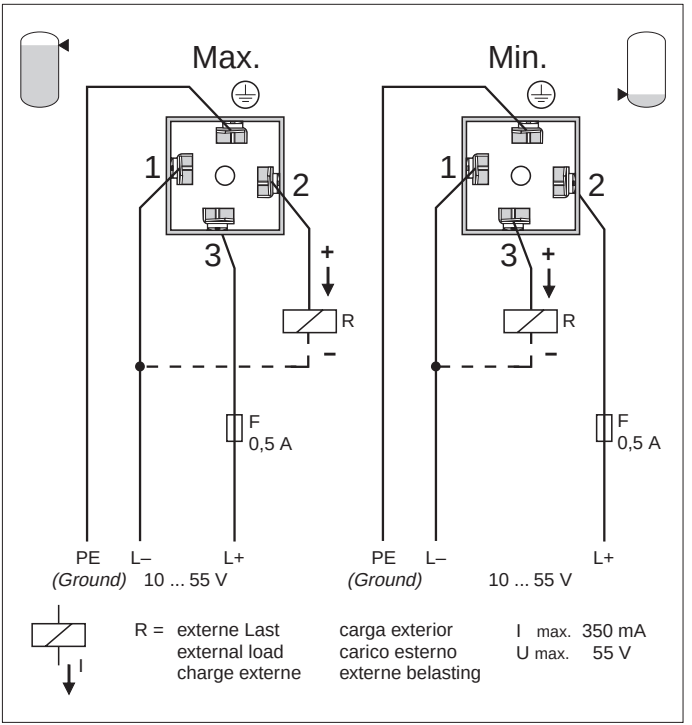
e **Connection DC version**
Max. = max. fail-safe mode
Min. = min. fail-safe mode

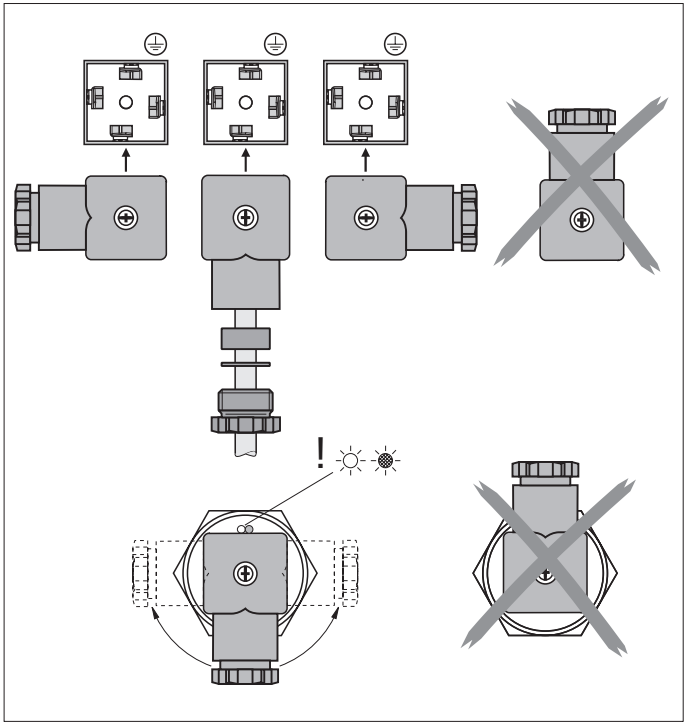
f **Raccordement variante tension continue**
Max. = sécurité maximum
Min. = sécurité minimum

es **Conectar las variantes de corriente continua**
Máx. = Conexión de seguridad máxima
Mín. = Conexión de seguridad mínima

i **Collegamento della versione in corrente continua**
Max. = Sicurezza di massimo
Min. = Sicurezza di minimo

nl **Gelijkstroomvarianten aansluiten**
Max. = max. veiligheidsschakeling
Min. = min. veiligheidsschakeling (ruststroomprincipe)





d Kabeldose zusammenbauen und festschrauben

e Assemble plug and screw tight

f Assembler et visser le boîtier de raccordement

es Ensamblar y atornillar las cajas de conexiones

i Montare il vano connessioni avvitandolo a fondo

nl Connector samenbouwen en vastschroeven

d **Funktion**
Max. und Min. =
Sicherheitsschaltung

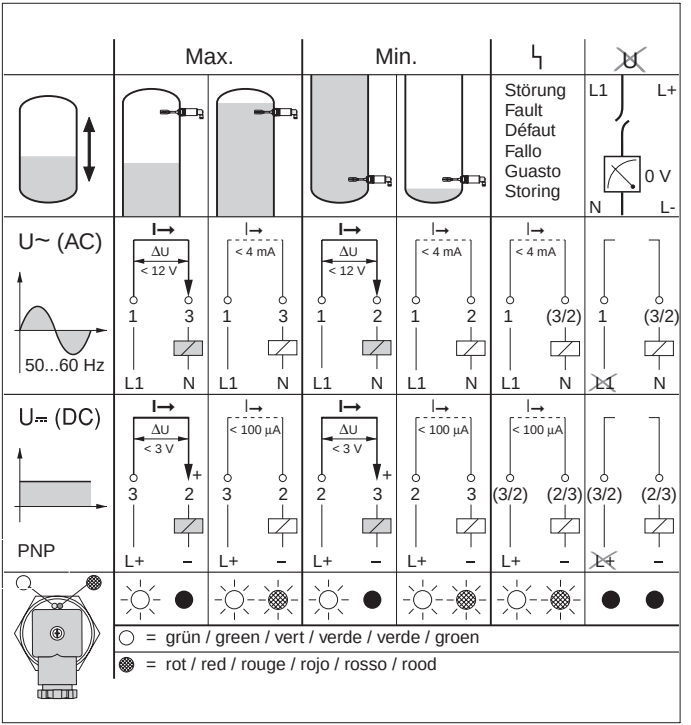
e **Function**
Max. and Min. = fail-safe
mode

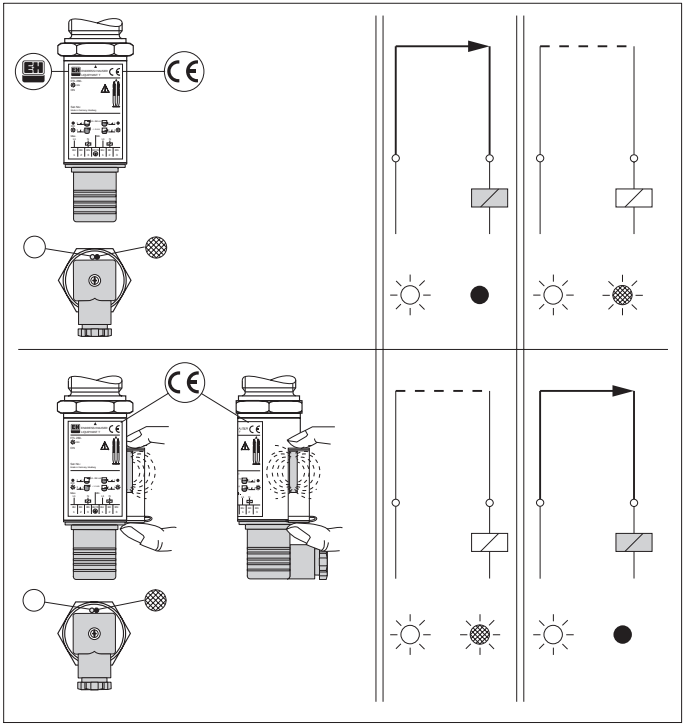
f **Fonction**
Max. et Min. =
commutation de sécurité

es **Funcionamiento**
Conexión de seguridad
máxima y mínima

i **Funzionamento**
Sicurezza di massimo e di
minimo

nl **Functie**
Max. en Min. =
veiligheidsschakeling
(ruststroomprincipe)





d **Test**
mit Prüfmagnet

e **Test**
with test magnet

f **Test**
avec aimant de contrôle

es **Comprobación**
Prueba magnética

i **Test**
Test magnetico

nl **Test**
met testmagneet

d **Reinigung**

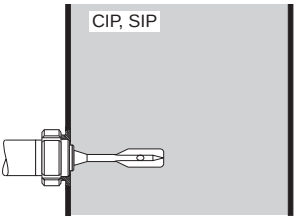
e **Cleaning**

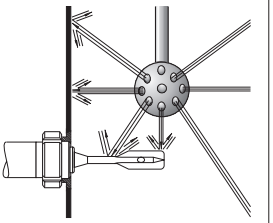
f **Nettoyage**

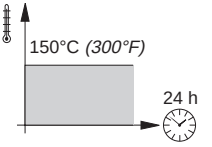
es **Limpieza**

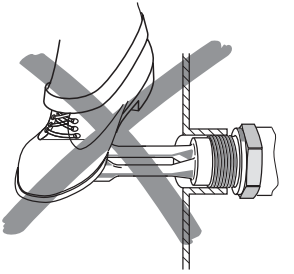
i **Pulizia**

nl **Reiniging**

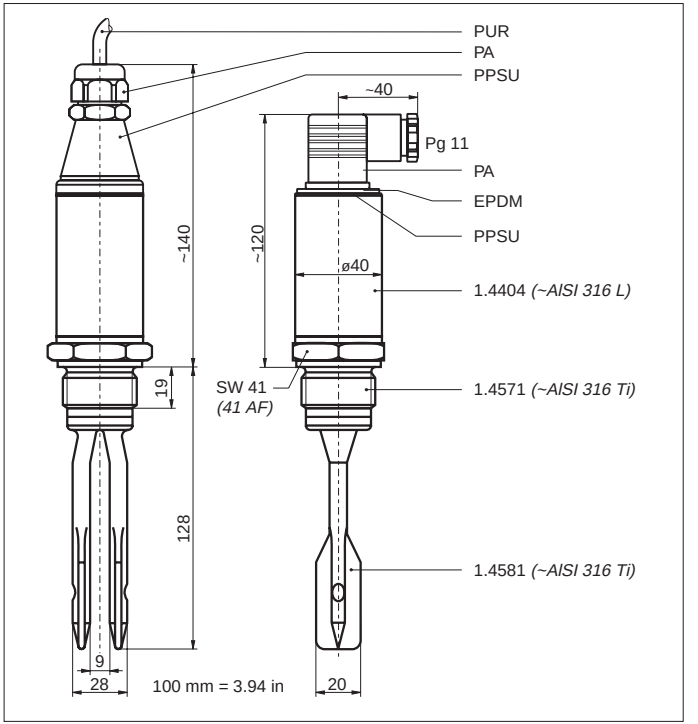








d **Nicht** besteigen!
e **Don't** use as a step!
f **Ne pas** marcher sur les lames vibrantes!
es **No** usar como peldaño!
i **Non** calpestare!
nl **Niet** op staan!



d Technische Daten
Abmessungen in mm
und Werkstoffe

e Technical Data
Dimensions in mm
and materials

f Caractéristiques techniques
Dimensions en mm
et matériaux

es Datos técnicos
Dimensiones en mm
y materiales

i Dati tecnici
Dimensioni in mm
e materiali

nl Technische gegevens
Afmetingen in mm
en materialen

d Umgebungstemperatur T_U
Betriebstemperatur T_B
Betriebsdruck p_e

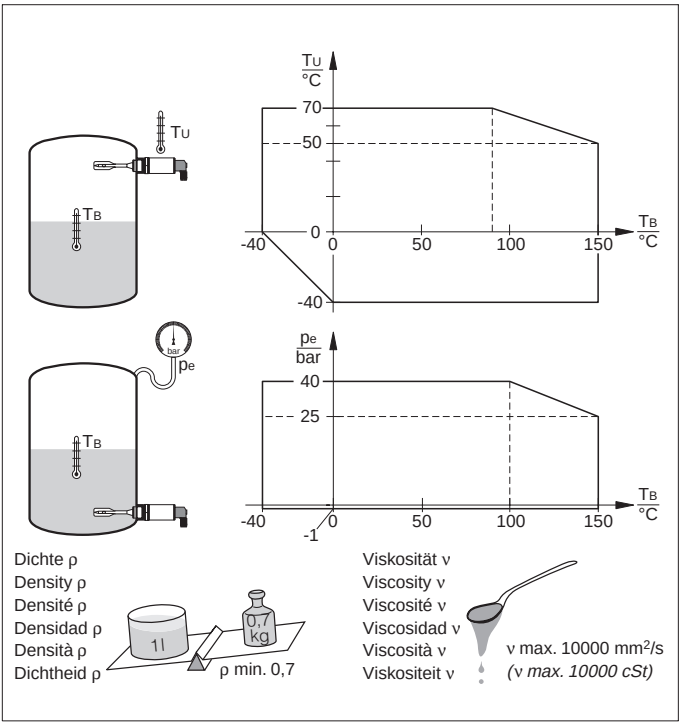
e Ambient temperature T_U
Operating temperature T_B
Operating pressure p_e

f Température ambiante T_U
Température de service T_B
Pression de service p_e

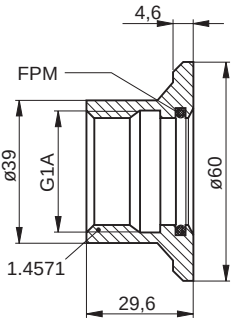
es Temperatura ambiente T_U
Temperatura de trabajo T_B
Presión de trabajo p_e

i Temperatura ambiente T_U
Temperatura d'esercizio T_B
Pressione d'esercizio p_e

nl Omgevingstemperatuur T_U
Procestemperatuur T_B
Procesdruk p_e



x °C = (1.8 · x + 32) °F
1 bar = 14.5 psi



d Einschweißmuffe
für Prozeßanschluß G

e Weld-in socket
for process connection G

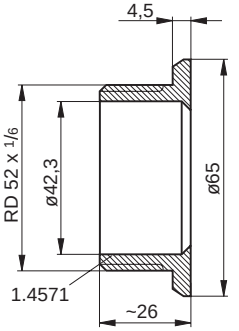
f Manchon à souder
pour raccord process G

es Manguito soldado para
conexión a proceso G

i Attacco a saldare per attacco
al processo G

nl Inlassok
voor procesaansluiting G

E+H 917969-1000



d Einschweißadapter
für Prozeßanschluß F

e Weld-in adapter
for process connection F

f Raccord à souder
pour raccord process F

es Adaptor soldado para
conexión a proceso F

i Adattatore a saldare per
attacco al processo F

nl Hygiënische inlasadapter
voor procesaansluiting F

E+H 942329-0001

d **Zubehör**
Ersatzteile
Abmessungen in mm

e **Accessories**
Spare parts
Dimensions in mm

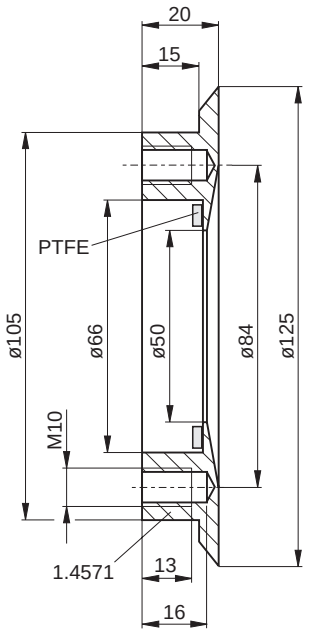
f **Accessoires**
Pièces de rechange

es **Accesorios y repuestos**
Dimensiones en mm

i **Accessori e ricambi**
Dimensioni in mm

nl **Toebehoren**
Reserve-onderdelen
Afmetingen in mm

100 mm = 3.94 in



d Einschweißflansch
für Prozeßanschluß D

e Weld-in flange
for process connection D

f Bride à souder
pour raccord process D

es Brida soldada para
conexión a proceso D

i Flangia a saldare per
attacco al processo D

nl DRD inlasflens
voor procesaansluiting D

E+H 916743-0000

d FPM-O-Ring für Einschweißmuffe G
e FPM O-ring for weld-in socket G
f Joint torique FPM pour manchon à souder G
es Junta en FPM para manguito soldado G
i O-ring in FPM per attacco a saldare G
nl FPM O-ring voor inlasadapter G

E+H 013 543-0000

d MVQ-Dichtung für Prozeßanschluß F
e MVQ seal for process connection F
f Joint MVQ pour raccord process F
es Sello en MVQ para conexión a proceso F
i Guarnizione in MVQ per attacco al processo F
nl MVQ-afdichting voor procesaansluiting F

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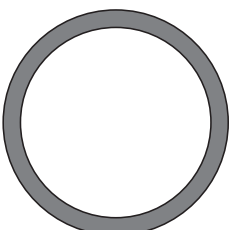
d PTFE-Flachring für Einschweißflansch D
e PTFE flat ring for weld-in flange D
f Joint plat PTFE pour bride à souder D
es Junta plana en PTFE para brida soldada D
i Guarnizione piatta in PTFE per flangia a saldare D
nl Vlakke PTFE-afdichtring voor inlasflens D

E+H 916 783-0000

d Dichtungen
e Seals
f Joints
es Juntas
i Guarnizioni
nl Afdichtingen



d Für Montage und Test

e For mounting and test

f Pour montage et test

es Para montaje y comprobación

i Accessori di montaggio e verifica

nl Voor montage en test

E+H 942667-0000

d Steckschlüssel SW 41 für Prozeßanschluß G

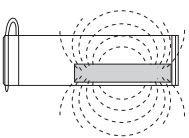
e Socket spanner 41 AF for process connection G

f Clé de 41

es Liave de fijación SW 41

i Chiave a tubo SW 41

nl Pijpsleutel SW 41



E+H 016920-0000

d Prüfmagnet

e Test magnet

f Aimant de contrôle

es Imán

i Magnete di controllo

nl Testmagneet

d TI 245F/00/de Technische Information für den Füllstandgrenzschalter Liquiphant FTL 330 L

e TI 245F/00/en Technical Information for level limit switch Liquiphant FTL 330 L

f TI 245F/14/fr Information technique Détecteur de niveau Liquiphant FTL 330 L

es TI 245F/23/es Información técnica sobre el detector límite Liquiphant FTL 330 L

i TI 245F/16/it Informazioni tecniche per l'interruttore di livello Liquiphant FTL 330 L

nl TI 245F/15/nl Technische Informatie voor de niveauschakelaar Liquiphant FTL 330 L

d Ergänzende Dokumentation

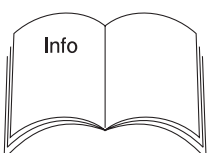
e Supplementary Documentation

f Documentation complémentaire

es Documentación adicional

i Documentazione supplementare

nl Aanvullende documentatie



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